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PILOT puts R&D in true perspective

Comment
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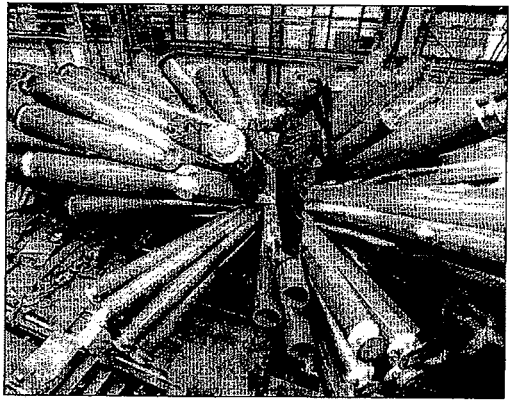
Australian research and development data consistently shows low levels of private sector investment, but the nation's growth record over many years has been impressive. Which picture, then, is correct? By international standards, is Australia doing poorly or well at innovation?

As standards of living are high (in purchasing power parity terms at or above the average of the older European Union members) and have been growing respectably, it is hard to argue that the largely unprotected Australian economy is not keeping up with the world's productivity leaders. From this it follows that inferences on innovativeness based on standard R&D indicators are misleading.

The limitations of current indicators, and of policies based on those indicators, have been clearly illustrated by the findings of PILOT, a project on the use of technology in non-high-tech sectors that has received more than $2.5 million in financing from the European Commission over the past three years. After conducting detailed company-level case studies in Germany, Italy, Poland, Ireland, Austria, Spain, Norway, Sweden and Finland, my colleagues and I learned that the accepted wisdom on innovation has little to do with reality.

None of the more than 50 companies studied engaged in conventional R&D at all, and yet most were highly innovative and showed important and continuing improvements in product and process technology as well as improvements in administrative efficiency. They did this by adopting advances originating in other sectors, often in other countries, that had been brought to their attention by suppliers, customers, collaborators and the technical education system.



Low-tech industries are by far the biggest generators of output. Photo: REUTERS

This does not mean that innovations originating in high-tech sectors are not vital, but high-tech industries generate less than 5 per cent of total output even in the most advanced economies. Of greater importance is the diffusion of these new techniques to the other 95 per cent of the economy where their implementation leads to the most substantial improvements in economic performance.

It is clear that policymakers in Canberra and elsewhere are not adequately tuned in to these dynamics. Instead of concentrating on improving rates of diffusion, which will continue to be the major sources of productivity growth, policymakers concentrate on promoting increases in high-tech R&D despite the fact that, in a fast moving and increasingly well integrated international economy, almost all of Australia's innovations will necessarily originate overseas.

"Government policies are often seen as irrelevant by those who have to implement them."

It is not surprising that little is known about how Australian firms actually obtain and use innovative knowledge. Nor is it surprising that state and federal policies are often seen as irrelevant by those who are supposed to implement them.

Why is this important? Government policies will succeed only if they are perceived by corporate decision makers to be relevant to the forces that really drive change. Attempts to win acceptance from business are more likely to succeed if they are based on an appreciation of how innovation is undertaken in practice.

A major redirection in Australian innovation policy is needed.

There should be a shift from encouragement of R&D expenditure to policies that reflect how innovation is actually accomplished in most companies. This means that analysts must work to understand the innovation practices that businesses use rather than attempting to impose abstract notions of what bureaucrats think they ought to be doing.

Once appropriate policies for learning and diffusion are settled, they need to be presented in ways that companies find acceptable. If policymakers had a better understanding of the needs and practices of companies, they would be able to sell new ideas more convincingly.

Furthermore, governments would be more likely to find ways of building on the strengths of Australian innovation practices rather than repeatedly telling managers that they do not understand their own businesses.

The federal government should reverse its position of undermining the viability of education. Australia's good growth performance in recent years has been largely based on the high quality of technical education that has been available at universities and TAFE colleges.

As any sort of meaningful innovation depends on an ability to assimilate knowledge quickly and from a wide range of sources, Australia can expect only to maintain its record if the workforce is well trained and alert to change.

A commitment to lifelong learning is particularly necessary. At times, government ministers give the impression of believing that each citizen is entitled only to a fixed amount of knowledge and that this should be accumulated early in life. This is clearly inadequate in an environment in which productive knowledge is increasing as rapidly as it has in recent years.

Technical and business education needs to be redirected to serving the needs of Australian residents and the national economy.

If we continue to revamp our educational system to make it more attractive to students from abroad but in the process reduce its relevance for local needs, we are bound to lose whatever innovative skills we now possess and to fall behind economically.

■ *Paul Robertson recently retired as a professor in the Graduate School of Management at Griffith University. Further information on PILOT can be found at www.pilot-project.org.*